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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/771,719

02/03/2004

Edward J. Simburger

D-487

4138

43499

7590

04/03/2008

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EXAMINER

TRINH, THANH TRUC

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/771,719	Applicant(s) SIMBURGER ET AL.	
	Examiner THANH-TRUC TRINH	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 10-11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10 and 11 are indefinite because claim 1, from which claims 10 and 11 depend, is not drawn to a "static electrical charge". It is unclear because there is no structural limitation in claims 1 or 10-11 that would be drawn to a "static electrical charge" in order for the "coating" conducting "static electrical charge" or "serving to discharge static electrical discharge accumulating on the coating".

Claim 13 recites the limitation "discharge static electrical charge" in line 9. It is unclear because there is no structural limitation in the claim that would be drawn to a "static electrical charge" in order for the coating to serve "to discharge static electrical charge accumulating on the coating".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1795

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 10-11 and 13-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Simburger et al. (44th AiAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Material Conference)

Regarding claim 1, as seen in Figures 1-4, Simburger et al. disclose a hinge for positioning a left panel and a right panel. As seen in Figure 5, the hinge comprises an inflatable tubular bladder for encapsulating an inflation material; a top film extending between the left and right panels and encapsulating a curing resin; and a bottom film extending between the left and right panels. The top film and bottom film are circumferentially disposed about the bladder. The top film has a top circumferential length, and the bottom film has a bottom circumferential length, wherein the top circumferential length is longer than the bottom circumferential length for angularly positioning the left and right panels. (See section titled "Multifunctional UV-Rigidizable Inflatable Hinge" on page 3)

Regarding claim 2, Simburger et al. describe a flex circuit which is integrated fully with the solar cells is incorporated into the hinge lay-up between the bladder and the bottom hinge (See page 3). It is the Examiner's position that the flex circuit is extended from the left panel (or the left solar panel) and around the bladder for electrically routing power from the left panel.

Regarding claim 3, Simburger et al. teach using an inflation material is a sublimation power disposed in the bladder for inflating the bladder. (See section titled "Inflation Material Trade Study" on pages 10 and 11)

Regarding claim 4, Simburger et al. disclose a reflective coating disposed on the bladder for reflective UV light into the curing resin. (See second paragraph of col. 2 on page 9)

Regarding claim 5, Simburger et al. disclose a left frame for securing the left panel to the top film and to the bottom film and to the bladder, and a right frame for securing the right panel to the top film and to the bottom film and to the bladder. (See second paragraph of col. 2 on page 3)

Regarding claim 6, Simburger et al. teach bonding the solar panel frames to the top, bottom layers and to the cylindrical portion of the bladder. (See Figures 1-5 and second paragraph of col. 2 on page 3). It is the Examiner's position that there must be adhesive layers, left and right, for "bonding" and securing the left and right frames to the left and right panels, to the top and bottom films, and to the bladder.

Regarding claims 10-11, Simburger et al. teach coating a PowerSphere Assembly including the hinge with ITO MgF_2 (indium tin oxide and magnesium fluoride) to prevent damage due to electrical arcing. (See first paragraph of col. 1 on page 3). It is the Examiner's position that the Simburger et al. teach a coating of indium tin oxide and magnesium fluoride disposed over the top and bottom films for passing UV light and for conducting static electrical charge, and the coating serving to discharge static electrical charge accumulating on the coating.

Regarding claims 13-15, as seen in Figures 1-5, Simburger et al. disclose a hinge for positioning a left panel and a right panel. The hinge comprises a top film for encapsulating a curing resin, wherein the curing resin cured by exposure to UV light; the top film having a top circumferential length for defining the position between the left and right panels; and a coating of indium tin oxide and magnesium fluoride; a bottom film, wherein the top and bottom films are circumferentially disposed about the bladder and the circumferential length of the top film is longer than that of the bottom film to define an angular position between the left and right panels. (See page 3, sections titled “UV Transparent Film Study and Testing” and “Inflation Material Trade Study”). The reference describes that the PowerSphere Assembly including the hinge is coated with transparent ITO/MgF₂ to prevent damage due to electrical arcing. (See first paragraph of col. 1 on page 3). Therefore, it is the Examiner’s position that the coating of ITO/MgF₂ can pass UV light for curing the curing resin and for static discharge protection.

Regarding claim 16, as seen in Figures 1-5, Simburger et al. disclose a hinge for positioning a left panel and a right panel. The hinge comprises a curing resin, a top film coupled to the left and right panels and for encapsulating the curing resin. The curing resin is cured by exposure to UV light, the top film has a top circumferential length is longer for defining the angular position between the left and right panels. (See Figures 1-5, page 3 and sections titled “UV Transparent Film Study and Testing” and “Inflation Material Trade Study”).

3. Claims 1, 13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Wallsten (US Patent 3960386).

Regarding claim 1, as seen in Figures 1-2, 5 and 6, Wallsten discloses a hinge (or inflatable channel 2) for positioning a left and right panels (or walls 3) comprising a tube-like inflatable bladder (4) for encapsulating an inflation material; a top film (middle portion of panels 3) extending between the left and the right panels and encapsulating a resin 7, and a bottom film (6) extending between the left and right panels. The top film and bottom film are circumferentially disposed about the bladder. The top film has a circumferential length, the bottom film also has a circumferential length, wherein the top and circumferential lengths angularly position the left and right panels. Wallsten describes layer 7 is made of nylon. (See col. 5 lines 13-18). Therefore, it is the Examiner's position that nylon is a curing resin.

Regarding claim 13, as seen in Figures 1-2, 5 and 6, Wallsten discloses a hinge (inflatable channel 2) for positioning a left and right panels (walls 3). The hinge comprises a top film (7) for encapsulating a curing resin (4), wherein the top film has a top circumferential length for defining the position between the left and right panels; a coating (a middle portion of wall 3) disposed over the top film; a bottom film (6) with a circumferential length, wherein the top and the bottom circumferential length defining the position between the left and right angle. The layer 4 can be made of PVC or polyethene... (See col. 8 lines 51-66). Therefore, it is the Examiner's position that the layer 4 is a curing resin. In addition, "curing resin cured by exposure to UV light" is a process-by-product limitation. The Examiner wants to point out that the patentability is

based on the product, and not on the method of making such as how the resin is cured. (See MPEP § 2113). Wallsten describes the coating layer (or middle portion of wall 3) made of nylon (See col. 5 lines 15-20), therefore it is the Examiner's position that the coating can be transparent used for passing UV light and static discharge protection.

Regarding claim 16, as seen in Figures 1-2 and 5-6, Wallsten discloses a hinge (or channel 2) for positioning a left panel and a right panel (walls 3). The hinge comprises a curing resin (7); a top film (middle portion of panels 3) coupled to the left and right panels for encapsulating the curing resin (7). The top film has a top circumferential length for defining the angular position between the left and right panels.

Regarding the limitation of "the curing resin being cured by exposure to UV light", this is a product-by-process limitation, and the patentability is based on the product, not on the method of making such as how the resin is cured.

4. Claims 13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaji et al. (US Patent 5701067).

Regarding claim 13, as seen in Figures 11, Kaji et al. disclose a hinge (106) for positioning a left panel (101) and right panel (101). The hinge comprises a top film (102) for encapsulating a curing resin (epoxy), wherein the top film has a top circumferential length for defining the position between the left and right panels; and a coating (103) disposed over the top film. Kaji et al. describe the top film (102) is attached to the panels (solar cells) by conductive epoxy. (See col. 8 lines 21-29). It is the Examiner's

position that the conductive epoxy is the curing resin. Kaji et al. teach the structural limitations of the instant claim, therefore the reference is deemed to anticipatory.

Regarding claim 16, as seen in Figure 11, Kaji et al. disclose a hinge (106) for positioning a left panel (101) and a right panel (101). The hinge comprises a curing resin (conductive epoxy – See col. 8 line 23), a top film (102) coupled to the left and right panels and for encapsulating the curing resin. The top film has a top circumferential length inherently for defining an angular position between the left and right panels. Kaji et al. teach all the structural limitations of the instant claim, therefore the reference is deemed to be anticipatory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (44th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Material Conference).

Regarding claims 7-8, Simburger et al. disclose hinge as described in paragraph 2, wherein a flex circuit is fully integrated on the back side of the solar cell for routing power supply to the spacecraft and incorporated into the hinge lay-up between the bladder and the bottom film of the hinge. (See last paragraph of col. 2 on page 2 and second paragraph of col. 2 on page 3). It is the Examiner's position that the ground pads must be disposed under the left and right panels for routing power supply, since the integration of the flex circuit is on the backside of solar cell.

Simburger et al. do not specifically teach that the flex circuit extends from the left and around the bladder, nor do they teach having a plurality of ground pads disposed on the top and bottom films and a plurality of extensions comprising conductive traces extending from the flex circuit to the plurality of the ground pads. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the flex circuit extending from the left panel and around the bladder, a plurality of ground pads and a plurality of extensions comprising conductive traces extending from the flex circuit to the ground pads, because, in order to complete the circuit the flex circuit must have ground pads for grounding the hinge, and in order to route power supply from the solar cells the flex circuit must be extended with plurality of extension comprising conductive traces from the panels and around the bladder, since

the circuit is incorporated between the bladder and the bottom film. Further, the location of the ground pads, either on top or bottom films, is a designer choice.

6. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simburger et al. (44th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics, and Material Conference) in view of Amick et al. (US Patent 5320684).

Regarding claim 9, Simburger et al. disclose a hinge as described in paragraph 2, wherein a flex circuit is fully integrated on the back side of the solar cell panels for routing power supply to the spacecraft and incorporated into the hinge lay-up between the bladder and the bottom film of the hinge. (See last paragraph of col. 2 on page 2 and second paragraph of col. 2 on page 3). In other words, Simburger et al. teach the flex circuit extending from the left panel and around the bladder for electrically routing the power from the left or right panels.

Simburger et al. do not specifically teach the solar cell panel comprising a silver contact and a thin film solar cell, nor do they teach the flex circuit comprising a conductor trace connected the silver contact.

Minahan et al. teach using solar cell panel with silver contact (38) on a solar cell with various dimensions. (See col. 3 lines 4-6 and col. 5 lines 37-48)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the hinge of Simburger et al. by using silver contact as taught by Minahan et al., because it would improve electrical conduction.

It would certainly be obvious to one having ordinary skill in the art at the time the invention was made to have the solar cell panel comprising a thin film solar cell, because Minahan et al. teach that the solar cell can have various dimensions.

Regarding claim 12, Simburger et al. disclose a hinge as described in paragraph 2, wherein a flex circuit is fully integrated on the back side of the solar cell panels for routing power supply to the spacecraft and incorporated into the hinge lay-up between the bladder and the bottom film of the hinge. (See last paragraph of col. 2 on page 2 and second paragraph of col. 2 on page 3). In other words, Simburger et al. teach a flex circuit extending from the left panel and around a bladder. And in order to complete the circuit, the flex circuit inherently comprises a trace conductor for electrically routing power from the left panel having electrical contact and around the bladder.

Simburger et al. do not specifically teach a wrap around contact (40).

Minahan et al. teach using a wrap around contact. (See col. 5 lines 37-48).

It would have been obvious to one having ordinary skill at the time the invention was made to modify the hinge of Simburger et al. by using a wrap around contact as taught by Minahan et al., because it would improve surface efficiency. (See col. 1 lines 41-63)

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wallsten (US Patent 3960386) in view of A. D. Struble Jr. (US Patent 3277479)

Regarding claim 3, Wallsten discloses a hinge as described in paragraph 3.

Wallsten does not teach that the inflation material is a sublimation powder disposed in the bladder for inflating the bladder.

A.D. Struble Jr. teaches using a sublimation powder (14) disposed in the bladder for inflating the bladder. (See '479 Figure 4 and col. 3 line 49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Wallsten by using sublimation powder as taught by A. D. Struble Jr., because it would reduce weight and be more reliable. (See col. 1 lines 42-45)

8. Claims 1-9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. (US Patent 5701067) in view of A. D. Struble Jr. (US Patent 3277479).

As seen in Figures 10-13, Kaji et al. disclose a hinge 126 for position a left panel and a right panel. The hinge comprises a pivot (128); top film (top 1210) extending between the left and right panels and encapsulate a curing resin (pivot 128 can be made of plastic, a curing resin – See col. 9 lines 4-5); a bottom film (122, See col. 8 lines 25-26) extending between the left and right panels. The top film and the bottom film are circumferentially disposed about the pivot, the top film having a top circumferential length, the bottom film having a bottom circumferential length. The top and the bottom circumferential lengths are for angularly positioning the left and right panels.

Kaji et al. do not teach an inflatable bladder for encapsulating an inflation material, nor do they teach using sublimation powder and reflective coating.

Regarding claims 1 and 14, A.D. Struble Jr. teaches using an inflatable bladder (or an inflatable tube 10) for encapsulating an inflation material 14. (See Figures 2-4)

Regarding claim 3, A. D. Struble Jr. teaches the inflation material is a sublimation powder disposed in the bladder for inflating the bladder. (See '479, Figures 2-4 and col. 3 line 49)

Regarding claim 4, A. D. Struble Jr. teaches coating the bladder (or inflatable tube 10) with aluminum. (See '479 col. 2 lines 54-72 and col. 3 lines 55-66 bridging col. 4 lines 1-29). It is the Examiner's position that aluminum is a reflective material. In other words, a reflective coating is disposed on the bladder.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the hinge of Kaji et al. by replacing the pivot 128 with an inflatable bladder having sublimation powder inside for inflating the bladder and aluminum layer for reflecting and conducting as taught by A. D. Struble Jr., because it would reduce the weight and be more reliable. (See col. 1 lines 42-48)

Regarding claim 2, as seen in Figure 13, Kaji et al. describe flexible and conductive leads 22 extending from the left panel and around the hinge for electrically routing power from the left panel. (See '067 col. 8 lines 25-26, col. 8 lines 58-67 bridging col. 9 lines 1-15).

Regarding claims 5-6, as seen in Figure 13, Kaji et al. describe the solar cell unit (121) attached to the hinge (126) by using adhesive layers 1210, and each solar cell unit has a substrate at the bottom and collector electrode on top to support the solar

cell. (See col. 7 lines 61-67 bridging col. 8 lines 129). It is the Examiner's position that the substrate and the collecting electrodes together constitute the frame for supporting and securing the left panel to the top film and to the hinge (or pivot 128).

Regarding claim 7, as seen in Figures 12 and 13, Kaji et al. describe a flex circuit as addressed in claim 2. Raji et al. also disclose a plurality of ground pads (metal contact – See '067 col. 8 lines 19-20) disposed on the bottom film, a plurality extension comprising conductive traces (leads 122) extending from the flex circuit to the plurality of ground pads. In addition, the location of the ground pads, either on top or bottom films, is obviously a designer choice.

Regarding claim 8, as seen in Figure 13, Kaji et al. disclose a flex circuit (122) extending from the left panel and around the hinge for electrically routing power from the left panel, a plurality of ground pads (collector electrodes and metal layer – See col. 8. lines 7-29) disposed on the bottom films and disposed on and under the left and right panels, and a plurality of extensions comprising conductive traces extending from the flex circuit to the plurality of ground pads. The location of the ground pads, either on top or bottom films, is obviously a designer choice.

Regarding claim 9, Kaji et al. disclose a flex circuit (122) extending from the left panel and around the hinge for electrically routing power from the left panel, the left panel being a solar cell panel comprising a silver contact (See col. 8 lines 7-29) and a thin film solar cell (See col. 7 lines 61-67). The flex circuit comprises a conductor trace (122) connected the silver contact for routing power from the left panel and around the hinge. (See Figure 13).

9. Claims 10-11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. (US Patent 5701067) in view of A. D. Struble Jr. (US Patent 3277479) and further in view of Dever et al. ("Indium Tin Oxide-Magnesium Fluoride Co-Deposited Films for Spacecraft Applications", International Conference on Metallurgical Coating and Thin Films, August – 1998).

Regarding claims 10-11 and 15, Kaji et al. and A. D. Struble Jr. teach a hinge as described in paragraph 11, wherein Kaji et al. teach having a transparent protective laminate (123) on top and bottom of the hinge for passing UV light.

Neither Kaji et al. nor Struble teach the coating is for conducting static electrical charge and made of indium tin oxide and magnesium fluoride.

Dever et al. teach coating indium tin oxide and magnesium fluoride on the surface of a spacecraft for passing UV light and conducting static electrical charge. (See the Introduction).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the hinge of Kaji et al. and Struble by providing a coating layer of indium tin oxide and magnesium fluoride as taught by Dever et al., because it would prevent arcing. (See the Conclusion)

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. (US Patent 5701067) in view of A. D. Struble Jr. (US Patent 3277479) and further in view of Minahan et al. (US Patent 4610077).

Kaji et al. and A. D. Struble Jr. disclose a hinge as described in paragraph 11.

Neither Kaji et al. nor A. D. Struble Jr. teach a wrap around contact.

Minahan et al. teach using a solar cell having a wrap around contact. (See the Abstract and Figure 1k of Minahan et al.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kaji et al. and A. D. Struble Jr. by providing a wrap around contact as taught by Minahan et al., because it would improve surface efficiency. (See '077 col. 1 lines 41-63)

Response to Arguments

Applicant's arguments filed 12/28/2007 have been fully considered but they are not persuasive.

Applicant argues "[t]he inventors executed invention disclosure documents between November and December 2002, describing the inventions, with an indication that the material in the invention disclosure will be published at the AIAA in April 2003. The application was filed within one year of the AIAA publication. The AIAA reference is not prior art and does not anticipate the present invention." However, this argument is not persuasive. As stated in 35 U.S.C 102(a),

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The AIAA reference is qualified as a prior art since the term "others" in 35 U.S.C. 102(a) refers to any entity which is different from the inventive entity. The entity need

only differ by one person to be “by others.” The entity, or authors in the AIAA publication include Henry B. Curtis, Todd T. Peterson who are not in the entity of instant application. In addition, the entity, or inventors in the instant application include Alen Perry, Suraj Rawal and Craig Marshall who are not in the entity of the AIAA publication. Therefore the entity of the AIAA publication differs from the entity of the instant application.

Applicant argues “Wallsten does not have anticipatory panels but only walls 3 of the air bag disposed between frame hinges. The diameter and pressure of the air bag define the position of the walls of the air bag. The hinges do not define that the position of the walls, as the hinges can flex up to 180 determined by the diameter of the air bag, and not the top and bottom layers. Claim 1 is not anticipated by Wallsten at least because Wallsten does not have panels and does not use top and bottom layers of the hinges for defining the angular position of the non-existent panels.” However, the argument is not seemed to be persuasive. As seen in Figures 1-2, 5 and 6, Wallsten discloses a hinge (or inflatable channel 2) for positioning a left and right panels (or walls 3) comprising a tube-like inflatable bladder (4) for encapsulating an inflation material; a top film (middle portion of panels 3) extending between the left and the right panels and encapsulating a resin 7, and a bottom film (6) extending between the left and right panels. The top film and bottom film are circumferentially disposed about the bladder. In the broadest reasonable interpretation of the limitation, it is the Examiner’s position that walls 3 of Wallsten are panels, because of the flat surfaces. The top film has a circumferential length, the bottom film also has a circumferential length, wherein the top

and circumferential lengths angularly position the left and right panels. As seen clearly in Figures 1-2, 5 and 6, as the tubes 2 inflated, walls 3 with extensions from top and bottom layers (or middle portion of wall 3 and film 6) make an angular position. Therefore the hinge (or tube 2) positions the left and right panels, and the top and bottom circumferential lengths are for angularly position the left and right panels.

Applicant argues Wallsten does not teach the function of using an UV transparent coating to cure a polymer for rigidity. Applicant also argues there is no process step being claimed as "curing resin" indicating the state of the resin and not the making of the curing resin. Applicant further argues "Wallsten does not disclose the use of a curing resin that has to states when in use." The Applicant appears to be arguing limitations that are not within the claim as claim 13 does not require anything about "rigidity", or "a curing resin that has two states". In addition, the process step in claim 13 is "the curing resin cured by exposure to UV light". Some resin can be cured by different process such as exposing to heat, not to UV light.

In regarding claim 13, Applicant argues that claim 13 rejected over Kaji in view of Struble is impractical. Applicant also argues that "the rod in Kaji does not determine the angular bend, but only determines the radius of the bend to prevent breakage at the bend." However, the argument is not persuasive. As seen in the rejection above, claim 13 is rejected as being anticipated by Kaji. As seen in Figures 11-13, Kaji teaches a flexible hinge (106 in Figure 11, 126 in Figures 12-13) for bending the solar panels around pivot bar 128. Therefore, the hinge (126) is for positioning a left panel and a right panel.

Applicant argues "Dever teaches a TinOx and Mag fluoride for pass UV light and conducting static charge. Dever does not teach using a layer, that can be used for static discharge, that is also for passing through which UV light is passed that function to cure resin. However, the argument is not persuasive. Dever teaches the same material disclosed by Applicant's disclosure and also stated the coating is for conducting static electric charge (See the introduction of Dever). The material itself is transparent, thereby passing UV light. Furthermore, by conducting (away) static electrical charge, the coating of Dever simply discharges static electrical charge.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Truc Trinh whose telephone number is 571-272-6594. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nam X Nguyen/
Supervisory Patent Examiner, Art
Unit 1753

TT
03/26/2008